

Minutes

Town of Norwich Finance Committee Meeting Tuesday, March 16, 2010 Tracy Hall, Norwich, Vermont

Members present: Cheryl A. Lindberg (Vice Chair–Acting Chair), Stephen Flanders (Secretary), Keith Moran, Ann Sargent (arrived 5:05), Dan Weintraub (left at 5:20)

Members absent: Robert Mitchell and (Vacant)

Also Present: Henry Scheier, Neil Fulton, Pete Webster (Town Manager), Linda Gray (Norwich Energy Committee), Alan Berolzheimer (Chair, Norwich Energy Committee), Brett Tofel (Renewable Energy Systems & Technologies, LLC), Gerry Tolman, Watt Alexander, Dennis Kaufman (Lister)

Acting Chair Lindberg called the meeting to order at 5:00 PM.

Agenda Items Discussed

1. Review/Amendment of Agenda:

Lindberg reviewed the agenda. Flanders requested that the Chair add discussion of a white paper that he had prepared and circulated entitled, “Thoughts for the Selectboard.” The Chair agreed. Fulton asked whether there would be time to review a draft “Annex to Selectboard Financial Policies Defining Fund Types.” Lindberg explained that would have to wait for a future meeting.

2. Review/Approval of Minutes:

Lindberg asked for comments on the minutes of the meeting of 16 February 2010. Lindberg requested that the meeting time not be published with the future meeting dates, since the time has not been set for future meetings.

Motion: Moran moved and Weintraub seconded that the 16 February 2010 minutes circulated to the NFC be accepted as drafted with any editorial changes.

The motion passed unanimously.

3. Public Comments:

Alexander: Alexander asked to speak on two topics:

- He thanked the NFC for its participation in Town Eating Day (TED). He suggested that the NFC review its participation in view of participating next year.

Action: NFC to put TED on a future agenda..

- He expressed concern about the public dialog between the NFC representatives present at the Town Meeting deliberative session and the advocates for the school budget. He felt that the discussion polarized into 1) NFC’s perceived lack of appreciation for education and rigidity about guidelines on one hand and the 2) Norwich School Board’s claimed diligence in formulating a budget and the professed need to support children’s educations

on the other hand. He recommended a different approach, employing questions in public meetings, requesting a formal response, using pros and cons. He recommended that the NFC ask for responses to its questions in writing from the Norwich School Board in its meetings and from the public on the Norwich list server.

Scheier: Scheier reported that he has been receiving e-mail correspondence from those opposed to the recent Dresden Budget. Members of that group have requested Norwich participants in a discussion about an acceptable next iteration of the Dresden budget.

4. Revised Norwich Energy Committee Solar Project:

Lindberg invited Gray, Berolzheimer, and Tofel to join the discussion on the NFC's review of the Norwich Energy Committee's (NEC) Solar Power proposal envisioned for siting on the Public Works site. The NEC had prepared a one-page overview of the project (Appendix A), which it had circulated to the Norwich Selectboard and the NFC. In addition the NEC had responded to a list of questions that the NFC had generated (Appendix B) and provided a spreadsheet by e-mail with a variety of assumptions in six different scenarios to illustrate the possible financial outcomes of making the investment in the project.

The NFC decided that it would be a better use of time to forgo the presentation that the NEC had prepared and proceed with a discussion on the project. Lindberg invited NFC members to comment and ask questions in turn:

- **Weintraub:** Weintraub expressed support for the project. He cautioned that the U. S. may be on the verge of a deflationary period when borrowing money would be ill advised. He felt this possibility should be considered before going into debt, since the payments on the bond might become more expensive than the cost of electricity that they were intended to supplant.
- **Flanders:** Flanders proposed three criteria by which to judge the project, i.e. 1) The annual Town payments, now budgeted for electricity, should be lower thanks to the project than they would be without the project. 2) The internal rate of return should substantially exceed what the Town would obtain for funds it normally invests. 3) The Town's insurance on the project should cover any loss at full replacement value. He expressed concern that these criteria appear not to be met by half of the scenarios presented—those that assume an abrupt cessation of the \$0.06 per kWh now provided by Green Mountain Power (GMP). He further expressed doubt about the validity of assuming a \$150-K salvage value for the solar panels, which factors significantly in the end-of-project value.

Gray replied that GMP has made written assurance (but not guaranteed) that the scenarios reflecting an abrupt cessation of the GMP premium would not be likely. Berolzheimer explained that the \$150-K salvage value was a stand-in for future energy production after the project financial cycle was complete. Flanders suggested that a present-value calculation would handle that more effectively.

- **Moran:** Moran alluded to some additional questions that he had prepared and circulated earlier that day. He questioned why the project isn't structured to use grant money to pay for capital costs up front and thereby reduce the size of the bond. He questioned why the assumed rate of return on the "sinking fund" is 3%, when the Town receives only 0.7%

on its accounts. He also felt that 3% would be a more appropriate rate of inflation on maintenance costs. He also asked for confirmation that the Town's insurance would assure full compensation of any loss.

Gray suggested that with the low interest rate on the bond, it was more useful to borrow a larger sum. Berolzheimer suggested that the funds would have longer deposit times and thereby better interest rates. Webster confirmed that the Town's insurance would fully cover any loss with a small deductible.

- **Sargent:** Sargent concurred with Flanders' suggested criteria for project assessment. She asked why it was appropriate to go forward with the project now, since the technology involved would probably be getting progressively less expensive. She expressed a concern that the NEC had not fully explained the scenarios in its spreadsheets.

Tofel suggested that, since solar panels are at an historic low in price, now is the time to act. He alluded to a shortage in inverters as a sign that prices might rise again, because of the currently favorable investment conditions. Berolzheimer displayed a chart that showed the dropping price of power generation costs of solar panels. Sargent pointed out that the graph did not appear to be bottoming out, but continuing downwards.

- **Lindberg:** Lindberg expressed concern that the project is too technically specialized for most citizens to be able to assess it. She felt inadequately prepared to render a decision at this meeting.

Berolzheimer expressed a willingness to arrange for specialized briefings of NFC members to help them understand the project. He also suggested that the NFC need not render an opinion on the project.

- **Flanders:** Flanders expressed the strong opinion that it's the NFC's role to judge the financial viability of proposals like this because neither the Selectboard nor the public had the skill set to do so. He felt that the NEC had presented all the information needed to render a judgment, but recognized that some other NFC members might not have had sufficient time to review the materials and render a fair judgment.

Chair Lindberg thanked the NEC for their input on the project and turned to the next topic.

5. NFC Information Products and Tools:

Flanders introduced a document entitled "Norwich Finances for Yankees" that he had prepared and shared earlier drafts with the NFC. He presented the document as a primer for those interested in understanding how budgets are assembled and taxes are calculated. Some discussion points included:

- He reported that the current version reflected a thorough review by Neil Fulton, who endorsed it as useful.
- He also suggested that it be regarded as a living document, subject to further updates.
- He asked for a motion to forward it to the Selectboard for posting on the Town website under the Norwich Finance Committee.

Motion: Sargent moved and Moran seconded that the NFC forward the document, “Norwich Finances for Yankees,” to the Norwich Selectboard for posting on the Town website for public access and it be treated as a living document subject to future revision.

The motion passed unanimously.

Action: Flanders to forward the document to the Selectboard for acceptance and posting on the Town website.

6. Recommendations to Selectboard:

The NFC members present agreed to defer refer deliberation on a proposed ”DRAFT Criteria for Non-Profit Organization Tax Support” until a later meeting.

Instead they agreed to discuss Flanders’ document, “Thoughts for the Selectboard,” which Flanders explained outlined some ideas on how the Selectboard could use its proposed retreat as an opportunity to assess its decision-making process. Flanders asked whether individual NFC members would recommend that “the Selectboard devote its retreat to improving its decision process in the context of the Town Manager form of government.” The members present concurred with show of hands.

7. Other Topics: Topic for future meetings, include:

- Criteria for Non-Profit Organization Tax Support
- Review of Town Eating Day
- Communication of concerns with budgets to the public and the Town boards

8. Summary of Next Agenda:

- Election of officers
- Demonstration of reverse tax calculators.
- Applicant for the Finance Committee
- Review of Fulton draft “Annex to Selectboard Financial Policies Defining Fund Types.”
- Discussion of NFC approach to school district issues, including contract negotiations and formulation of Budget Guidelines

9. Adjournment

Motion: Flanders moved and Sargent seconded that the committee adjourn.

The vote was unanimous.

Adjourned at 6:40 PM.

Upcoming meeting dates:

Tuesday, April 20, 2010

Tuesday, May 18, 2010

Tuesday, June 15, 2010

Appendix A: Information Sheet Provided by NEC

Norwich Community Solar Project

What:

- 230-kW solar array (about 4 times as large as the one at FarmWay in Bradford, VT)
- connected to Green Mountain Power utility lines
- electricity generated by the solar project will offset electricity usage by Town facilities
- total project cost is about \$960,000: \$220k funded by a grant, \$740k funded by a tax-credit bond at low interest (~1%)

Where:

Town Garage property on New Boston Road, on ~1 acre located uphill and to the left of the driveway to Highway Dept. facilities

When:

- March? Select Board calls for a special Town meeting, to vote on the bond for project financing
- May? Special Town meeting for a Town-wide vote on the project bond
- May-July? Sales of the bond to local/regional investors (institutions and individuals)
- After the bond is completely sold, construction can start; allow 6 months for all stages: finalizing electrical/mechanical design, ordering components, installation, testing, commissioning, utility inspection and interconnection.

Why:

- the Town can stabilize its electricity costs at 12 cents/kWh for the next 25+ yrs (the current rate is 13 cents)
- the Town will save money on electricity costs
- the Town will add to Vermont's renewable energy generation capacity
- the Town will decrease its carbon footprint

How does the solar project help the Town budget?

- The Town will save about \$400,000 over the first 25 years of the project (the "project life"), if electric rates increase at an average 2.5% per year, which is well in line with recent trends.

- The bond is a tax-credit bond, known as a Clean Renewable Energy Bond. The principal benefit to bondholders is a federal tax credit; 1% interest is planned, to make it a more competitive investment. The bond is repaid through 17 annual payments to a “sinking fund;” annual interest payments (\$9,600) are also made. The bond is backed by the “full faith and credit” of the Town.
- For the first four years, the state grant (\$220,000) covers the sinking fund payments and the Town can put its budgets for electricity into a reserve fund, instead of paying bills to Green Mountain Power. Over four years, this reserve fund will grow to about \$120,000. Starting in Year 5 of the project, the Town makes the sinking fund and interest payments from the reserve fund and from the annual budget for electricity (directed to payments for the solar project instead of to utility bills).
- The annual payments to the “sinking fund” will start at just under \$56,500 per year. The sinking fund itself will earn interest, reducing the annual cash contribution from the Town. In Year 8, the Town's contribution will be under \$44,000; in the last year of payment, it will be about \$28,500.
- At the beginning of the project, the Town is trading payments to the utility for payments on the bond. In Year 17 of the project, bond payments are completed. After Year 17, there are neither utility payments, nor bond payments -- just electricity (and savings) generated by the solar array.

Other Questions

What's the electricity generated by the project worth if you factor in inflation? Assuming 2.5% annual electricity inflation in Vermont (2.5% is actually lower than the average of the last 5 years), the value over 25 years is almost \$1.3 million. This is what the Town can expect to pay to the utility company if there is no solar project. If electricity rates grow more quickly, that total will grow as well.

Why is it calculated over 25 years? The solar panels used in this array are warranted by the manufacturer to produce at least 80% of their rated power for 25 years. Even though the warranty expires after 25 years, the panels should continue to produce power, at a declining rate, for another 15 years. However, since there's no warranty, we have NOT used this additional electricity in our calculations.

What will it cost? The array itself will cost about \$872,400.

Are there additional costs? Yes. Site preparation will cost about \$20,000; extending a three-phase utility line to the site is about \$33,000. Also, the Town will contract for annual maintenance at a cost of \$2,000, and the array will be insured under the Town's insurance policy at a cost of \$2,300 per year.

Why do it now? Both the state grant and the CREB bonding authority are time sensitive. If we don't commit to use them this year, they go away.

What's the environmental benefit? The project will offset about 200 pounds of nitrogen oxide, 600 pounds of sulfur dioxide, and 240,000 pounds of carbon dioxide annually, according to the EPA greenhouse gas emissions calculator.

Can the panels used in this array be recycled at the end of their life cycle? Yes.

Appendix B: NFC/NEC Questions and Answers

Questions for the Norwich Energy Committee From the Norwich Finance Committee Regarding the Norwich Solar Energy Proposal

1. Please tally the bottom-line income and expenditures that result in the claimed savings over the project life in a simple column.

Answer: Column R in each scenario gives the year-by-year cash flow. Column S show the accompanying account balance for each year; line 24 gives a total balance after 24 years and line 25 includes the resale value of the panels in that accumulated balance.

2. Is the claimed savings of \$400K over the life of the project the net financial benefit to the Town?

Answer: Yes

3. On what financial scenario have you based your recommendation to the Town? What is its Internal Rate of Return? In this scenario, what is guaranteed? What isn't guaranteed?

Answer: Our recommendation of this project is based on our judgment that even in the worst-case scenario, the project will be revenue-positive for the Town over the warranted [sic] life of the panels (25 years) and beyond. The IRR ranges from .95% to 3.95% depending on the scenario. See the Data Assumptions page, row 43.

4. What is the worst-case scenario that you have considered? What is its Internal Rate of Return?

Answer: Scenario 1, with 0% annual inflation in utility rates, and phase-out of the .06/kWh Green Mountain Power solar premium after six years; IRR is .95%

5. How does your scenario factor in the probable closing of Vermont Yankee?

Answer: The closing of Vermont Yankee would most likely create upward pressure on the retail price of electricity. (Relicensing will do the same, since the purchase price Entergy has offered to Vermont utilities is higher than the current price.) We have modeled the annual inflation rates for the cost of power at 0%, 1%, 2%, and 3%. One big advantage of the solar project is that it locks in the price of power that the Town will pay for 25+ years, at a stable rate that is comparable to (actually slightly lower than) what we're paying today.

6. Do your financial returns now employ Present Value calculations?

Answer: No. The money available for this project can only be used for one purpose.

7. What happens to the Internal Rate of Return when Green Mountain Power rates rise? Does it go up or down?

Answer: It goes up. See scenarios 2-6.

8. Does either your assumed or worst-case scenario require the Town to provide tax dollars in a future fiscal year, beyond what it would have budgeted for electricity?

Answer: Yes. In the worst-case scenario, in Year 12 the Town would have to spend a little under \$20,000, and in Years 13-18 the annual expenditure would decline from that level to around \$17,000. In this scenario the Town's account balance would remain negative until Year 24. (See column S.) Under the next-worst scenario, #2 (1% inflation and phase-out of the premium after six years), the Town would make expenditures in Years 13-17, which decline from around \$16,000 to around \$11,500. Under scenario 2, the account balance turns positive in Year 20. Thus, any required expenditures in these middle years should be considered a medium- to long-term investment by the Town that will have a positive financial return.

9. Does the project consider the opportunity cost to the Town of donating land that it may require at a later date?

Answer: No. As planned, the solar project will share a site that the Town expects to use to build a new public works facility. Initial prep work (clearing) for the whole site will be done at the same time.

10. What is the effect of changing the salvage value of the panels to zero on the Internal Rate of Return? Why is this not a more appropriate assumption than assuming the panels will have salvage value or even be a hazardous waste problem?

Answer: At the end of 25 years the panels will still be producing \$30,000-\$60,000 worth of power annually (a net of \$20,000-\$50,000 revenue to the Town annually). There would be no reason to shut the system down. The financial projections run for 25 years because that's the length of the warranty on the panels. Including the salvage value at Year 25 is a way to account for their continuing power production and/or resale value beyond the 25-year timeframe.

11. What has been the historical trend for EV solar panel efficiency per unit of cost? Have you plotted this?

Answer: See #12 below.

12. If the trend is for the efficiency of solar panels to increase dramatically in the near future (5-10 yrs) while at the same time the cost of panels drop dramatically over the same period? (Moore's Law), wouldn't it be smarter for the Town to delay investing?

Answer: Moore's Law does not apply. From Wikipedia:

It is a common (but mistaken) belief that Moore's Law makes predictions regarding all forms of technology, when it actually only concerns [semiconductor circuits](#).

Panel efficiency is not the issue; the issue is cost per watt. Cost per watt is currently at a historic low and is unlikely to decline further in the near to medium term. In fact, because of supply and demand factors, cost per watt is more likely to increase in the short to medium term. Equally important, we have in hand now a \$220,000 grant from the state of Vermont—which represents about a quarter of the total project cost—and a very low-interest financing mechanism. Competition for these state grants, if they're available at all, is likely to increase and there is no guarantee Norwich would receive one at a future point in time. The remainder of the financing, via the Clean Renewable Energy Bond, comes at a very favorable rate, ~1%, and our authorization from the IRS will expire in 2 and a half years.

13. In the event of a total loss of the system from any cause (fire, lightning, wind etc) would the Town's casualty insurance plan pay for the depreciated value of the system or would it pay for full replacement cost of both labor and equipment?

Answer: Pete Webster thinks it will cover full replacement cost, but he's checking with the insurer. We should have a definitive answer tomorrow.

14. What is the breakdown of labor and materials in the construction costs?

Answer: Solar Installer Labor = \$112,655 (13%) of the \$872,342 three-phase bid